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ABSTRACT

Program budgeting is a system that focuses on outcomes rather than on inputs, relates resources to outcomes, includes more than one time interval in the budget document, and states outcomes in measurable terms. If the assumptions underlying program budgeting are accepted, the system can be an effective tool for identifying new ways to do jobs faster, better, and less expensively. Some technical and psychological problems may have to be overcome before the potential benefits of program budgeting are realized. The major technical problems are determining the relevant costs of programs and determining the causal effects of programs. The decision to implement a program budgeting system should be a six-step process: (1) define and limit a problem to be solved or a question to be answered; (2) analyze the problem in terms of technical or psychological factors, and anticipate new problems that may emerge as a result of solving the original problem; (3) develop standards by which solutions to the problem can be evaluated; (4) collect and organize all data pertinent to the decision; (5) select a preferred solution to the problem and test it; and (6) implement the preferred solution and evaluate it. (Author/IRT)

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PLANNING FOR PROGRAM BUDGETING

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Abstract

PLANNING FOR PROGRAM BUDGETING

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Many governing boards and administrators have considered or attempted to implement Program Budgeting in their educational institutions. Few, if any, have anticipated the magnitude or complexity of the problems associated with the process. This monograph provides decision-makers with information to help them deal with these problems.

Program Budgeting is described as a system for securing answers to four basic questions. Based on these questions the essential characteristics of an operational Program Budgeting system are: (1) focusing on outcomes rather than inputs, (2) the relating of resources to outcomes, (3) including more than one time interval in the budget document, and (4) stating outcomes in measurable terms.

The assumptions underlying the rationale for developing a Program Budgeting system are identified along with techniques for realizing the potential benefits of the system. Technical and psychological problems associated with Program Budgeting are presented as obstacles to the realization of the system's potential benefits.

Planning for Program Budgeting is seen as a six-step decision-making process. Each step of the process is accompanied by suggested activities and considerations. The monograph concludes with a bibliography of pertinent publications.

PLANNING FOR PROGRAM BUDGETING

Kenneth M. Matthews

Introduction

Many governing boards and administrators have considered or attempted to implement Program Budgeting in their educational institutions. Few, if any, have anticipated the magnitude or complexity of the problems associated with the process. Some of the difficulties encountered by those attempting to implement a Program Budgeting system resulted from: (1) an inadequate understanding of the concept, (2) failure to accept the assumptions underlying the concept, (3) ignorance of the limitations of the system, or (4) insufficient consideration of the objectives to be met by implementing the system. This monograph serves as a primer for those who are considering initiating a Program Budgeting system in their organizations.

What is Program Budgeting?

Considerable variation exists in the descriptions of Program Budgeting. Program Budgeting has been described as a systematic approach to decision making, a framework for planning,[1] a communication tool,[2] and a disciplined way of relating activities to objectives.[3]

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[1]Robert F. Alioto and J. A. Jungherr, Operational PPBS for Education (Evanston, New York: Harper and Row, 1971) pp. 9-10.

[2]Orlando F. Furno; George J. Collins; and George B. Brain, Planning Programming Budgeting Systems - A Practical Approach (By the authors, 1972) p. 2.

[3]Stephen J. Knezevich, Program Budgeting - (PPBS), Berkeley, California: McCutchan Publishing Corporation, 1973, p. 3.

Considerable variation is also evident in the acronyms which have been proposed for Program Budgeting systems in education. The most common being PPBS - Planning, Programming, Budgeting System. Other acronyms include: PPBES - Planning, Programming, Budgeting, and Evaluation System; PPBADERS - Planning, Programming, Budgeting, Analyzing, Deciding, Evaluating, and Recycling System; RADS - Resource Allocation Decision System; and ERMS - Educational Resources Management System.[4]

In spite of differing descriptions of Program Budgeting, the concept itself is simple. Program Budgeting may be thought of as a system of securing answers to four basic questions: (1) "What do you want to achieve?" (2) "How can you achieve it?" (3) "When will you achieve it?" and (4) "How will you know that you have achieved it?"[5]

Examination of these four questions reveals characteristics which will be present in an operational Program Budgeting system. The focus of Program Budgeting is on outcomes rather than on inputs. The first question, "What do you want to achieve?" identifies the focus of Program Budgeting. All other processes are dependent upon the identification of the desired outcomes or objectives. None of the other questions can be answered until the desired objectives are determined.

The second question requires consideration of strategies or activities for achieving the objectives. This programming process includes the identification of the resources required by each strategy designed

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[4]Ibid, pp. 1-13.

[5]Robert F. Alioto and J. A. Jungherr, Operational PPBS for Education (Evanston, New York: Harper and Row, 1971), p. 9.

to accomplish the desired objectives. Thus, in an operational Program Budgeting system, resources are related to objectives.

"When will you achieve it?" implies that different objectives may be achieved at different times. If resources are related to objectives and different objectives can be achieved at different times, then a Program Budget document must include more than a single interval of time. Most commonly, this is referred to as multi-year budgeting.

To answer the last question, "How will you know that you have achieved it?" requires that objectives be stated in terms which can be evaluated. If objectives are stated in terms which cannot be evaluated, then the last question cannot be answered.

Based upon the above, an operational Program Budgeting system will be characterized by at least the following conditions:

1. The focus is on outcomes rather than on inputs.
2. Resources are related to outcomes.
3. More than one interval of time is included in the budget document.
4. Outcomes are stated in measurable terms.

According to one authority, an educational institution cannot be considered to be operating in a Program Budgeting mode unless all of its dimensions are present.[6] This point of view is consistent with the various acronyms proposed for Program Budgeting. All of the acronyms use the letter "S" to signify that Program Budgeting is a system. Consistent

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[6]Stephen J. Knezevich, Program Budgeting - (PPBS), (Berkeley California: McCutchan Publishing Corporation, 1973) p. 236.

with the systems concept, the various processes in Program Budgeting are interacting and interdependent components of the continuous cyclic system. One part of the system cannot be considered as a substitute for the whole.

Assumptions Underlying Program Budgeting

The rationale for developing a Program Budgeting system is based upon six assumptions. The utility of Program Budgeting to educational organizations is dependent upon the acceptance of these assumptions by the policy makers, administrators, and workers of the organization. The six assumptions are:

1. The resources available to an institution are less than equal to the demands of the institution.

2. The educational institution exists to produce a set of outcomes - to achieve certain objectives expressed as specific changes in characteristics of the learners.

3. The objectives of an educational institution can be achieved theoretically in a multitude of ways (program plans) some of which are more effective than others.

4. The productivity of an educational institution can be increased by the organization of learning activities and supporting services into programs specifically directed toward achieving previously defined goals and objectives.

5. Better decisions regarding the selection of program plans and greater benefits from their operation result when the costs thereof are considered on a long-term (multi-year) basis.

6. Better decisions regarding the selection of program plans and greater benefits from their application result when outcomes are related methodically to objectives.[7]

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[7]William H. Curtis (ed.) Educational Resources Management Systems (Chicago: Research Corporation of the Association of School Business Officials, 1971) pp. 37-39.

If these assumptions are not accepted by the policy makers and those who must operationalize the system, then the usefulness of Program Budgeting to the organization will be diminished.

Potential Benefits of Program Budgeting

President Johnson saw Program Budgeting, in the Federal government, as a tool which would help identify new ways to do jobs faster, better, and less expensively.[8] Program Budgeting systems in education have this same potential. Cost analysis techniques are essential to the realization of the potential benefits of Program Budgeting systems. Inherent in all cost analysis techniques is the consideration of time as a resource in addition to the human and material resources.

Cost analysis techniques vary in degree of sophistication. The most elementary being a comparison of the costs of alternative programs perceived to be equally effective in achieving desired objectives. More complex cost analyses involve a comparison of alternative programs differing in effectiveness, as well as in costs. Of even greater sophistication are cost analysis techniques which predict the relative utility of programs with multiple objectives and undetermined effectiveness in achieving these objectives.

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[8]Robert F. Alioto and J. A. Jungherr, Operational PPBS for Education (Evanston, New York: Harper and Row, 1971) p. 9.

Problems of Realizing the Potential Benefits of Program Budgeting

The major technical problems which must be overcome before the potential benefits of Program Budgeting are realized can be placed into two categories. These categories are: (1) determining the relevant costs of programs, and (2) determining the causal effects of programs.

Certain program costs are clearly relevant. The salaries of teachers, textbooks, and teaching supplies used in the program are plainly direct costs of the program. Other program costs are not so obvious. The cost of administrative services, transportation, plant maintenance and operation are not always clearly identifiable as relevant costs of a program. What costs are relevant varies with programs, as well as with individuals' interpretations of the term relevant.

The causal effects of educational programs are difficult to isolate from other environmental influences. When changes occur in the behavior of pupils it is difficult to determine if a specific program "caused" the change or if some other factors influenced the change. For instance, differences in home environments are related to differences in reading achievement test scores and reading ability may directly influence achievement test scores in the social sciences. Although statistical techniques exist for determining relationships between variables which may affect the changes in pupil behavior, they require sophisticated skills and are not easily initiated.

In addition to technical problems, there are psychological problems. There may be resistance among the personnel of the organization to the

implementation of a Program Budgeting system; particularly, if such a system is perceived as a personnel evaluation system.

A second type of psychological problem develops whenever sophisticated decision making tools, such as Program Budgeting, are applied to problems which are political in nature. Program Budgeting does not generate decisions. It simply provides a means whereby better decisions can be made. Political problems require political decisions. Before the potential benefits of Program Budgeting can be obtained decision makers must utilize the information generated by the system.

Implementing Program Budgeting

The process of deciding to implement a Program Budgeting system is essentially the same as other decision making or problem solving processes. An initial step might be the recognition, definition, and limiting of a problem. If no problem is perceived, or no questions need answers, then no further action is necessary. If decision makers consider current practices adequate, then a Program Budgeting system is not needed. Once the decision makers perceive that a problem exists, then the problem should be clearly defined and limited. If, for instance, the decision makers desire answers to questions such as: "What are the costs and benefits of our vocational programs?" and current practices cannot provide the answers, then a problem exists.

When the problem is recognized it can be defined and limited. Using the above example, definitions should clearly specify what is meant by the terms; "costs," "benefits," as well as, what constitutes the

"vocational programs." At this point, it would be helpful to limit the problem by specifying the kinds of information the decision makers believe to be relevant to the problem.

The next step in deciding to implement a Program Budgeting system is to thoroughly analyze and evaluate the problem. In this phase of the decision making process, all aspects of the problem are considered. Some questions which might be considered are:

1. Are there technical or psychological situations which must be changed before the problem can be solved?
2. Are there changes in the formal organizational structure which must take place before the problem can be solved?
3. Will new problems emerge as a result of solving this problem?

A third major phase of the decision making process would be to establish standards by which solutions to the problem can be evaluated. In this phase, a minimal acceptable level of effectiveness should be determined and criteria for evaluation established. An evaluation model could be developed at this point to compare the benefits and costs of alternative solutions to the problem.

The fourth step may be called the data collection phase. At this time, all data pertinent to the decision are gathered and organized. These data might include statements of the differences between the situation currently existing and the situation which would exist when the problem is solved.

The next phase of the decision making process is the formulation of several solutions to the problem, selection of a preferred solution, and testing of the solution before it is implemented. Several types of Program Budgeting systems might be developed. Perhaps, once the problem

is clearly defined and limited, it might be found that less than a comprehensive Program Budgeting system could solve the problem. If all the decision makers desire is program cost data, then a cost accounting system might be adequate to solve the problem.

Once alternative solutions to the problem are developed, one or more of them are selected for testing. A testing program might consist of simulation activities or the implementation of the selected solution in a small segment of the organization's operations on a pilot basis. Perhaps a combination of simulation and pilot testing might be an even more effective way of debugging the program before full scale implementation.

The final step of the process is the implementation and evaluation of a preferred solution to the problem. The evaluation being in terms of the criteria developed during the third phase of the decision making process.

In summary, the decision to implement a Program Budgeting system should consist of a six step process:

1. Define and limit a problem to be solved or a question to be answered.
2. Analyze the problem in terms of technical or psychological factors, as well as, new problems which may emerge as a result of solving this problem.
3. Develop standards by which solutions to the problem can be evaluated.
4. Collect and organize all data pertinent to the decision.
5. Select a preferred solution to the problem and test it.
6. Implement the preferred solution and evaluate it.

SELECTED BIBLIOGRAPHY

Alioto, Robert F., and J. A. Jungherr. Operational PPBS for Education. Evanston, New York: Harper and Row, 1971.

Carpenter, Margaret B., and Sue A. Haggart. "Cost-Effectiveness Analysis for Educational Planning." Educational Technology 10 (1970): 26-30.

Curtis, William H. (ed.) Educational Resources Management Systems. Chicago: Research Corporation of the Association of School Business Officials, 1971.

_____. PPBES - Show and Tell. Chicago: Research Corporation of the Association of School Business Officials, 1974.

"Financial Accounting Classification and Standard Terminology for Local and State Systems 1973." Washington, D. C.: Department of Health, Education, and Welfare Publication No. (OE) 73 - 11800.

Fitzpatrick, Edmund W. "Computing Cost-Effectiveness in a Public School System." Educational Technology 13 (1973): 37-40.

Forbes, Roy H. "Cost-Effectiveness Analysis: Primer and Guidelines." Educational Technology 14 (1974): 21-27.

Fox, David J. The Research Process in Education. New York: Holt, Rinehart and Winston, Inc., 1969.

Furno, Orlando F.; George J. Collins; and George B. Brain. Planning Programming Budgeting Systems - A Practical Approach. By the authors, 1972.

Kirst, Michael W. "The Rise and Fall of PPBS in California." Phi Delta Kappan. April, 1975, pp. 535-538.

Knezevich, Stephen J. Administration of Public Education. New York: Harper and Row, 1975. (3d)

_____. Program Budgeting - (PPBS). Berkeley, California: McCutchan Publishing Corporation, 1973.

Lavin, David E. The Prediction of Academic Performance. New York: Russel Sage Foundation, 1965.

Matthews, Kenneth M. "Relevance of PPBS?" speech presented at Association of Educational Data System's Program Budgeting workshop, Atlanta, Georgia, 4 April 1975. (Mimeo)